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The National Social Life, Health, and Aging Project: An Introduction

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THIS special issue is designed to bring an innovative longitudinal study on one of the least explored areas of aging to the notice of the research community and to encourage its use beyond the original team of investigators. The 2005–2006 National Social Life, Health, and Aging Project (NSHAP) is a national probability survey of 3,005 men and women between the ages of 57 and 85 years that is focused on intimate social relationships, including marriage, family, social ties, and sexuality. The study collected extensive information on physical and cognitive health, health behaviors, medications, and health service utilization. This study, designed to be longitudinal, also collected a wide array of biomarkers and other physiological assessments, including sensory functions. The NSHAP investigators obtained blood spot samples as well as saliva and vaginal swabs. These physiological data will allow researchers to uncover the biological mechanisms that link health and personal relationships. The survey assessed a wide array of psychological attributes, including attitudes, values, and quality of life. The NSHAP collected information on important chronic diseases such as diabetes, hypertension, and arthritis that are highly prevalent among elderly adults and that could affect intimate social relationships. Extensive data were collected on medication use, including prescriptions, over-the-counter medications, and nutritional supplements, in part out of a concern that patients might stop or reduce drugs whose side effects can sometimes affect sexual and other functions. Finally, the study obtained information about social networks and objective and subjective isolation. NSHAP thus was uniquely designed to provide an understanding of the complex unfolding dynamics of what the authors term "intimate dyads embedded in a larger social network" and their interactions with biology, culture, psychology, and health. Given the diversity and broad scope of measures included in the study, from hormones and sensory functions to attitudes and social networks, it is the epitome of a multilevel study. The investigators, representing multiple disciplinary backgrounds, developed a conceptual model of how the different levels or strata of variables might interact, and designed the study based on those hypothesized interactions. Indeed the study is distinctive not only in its focus on sexuality and intimacy but also in the disciplinary expertise that was assembled and, more importantly, integrated by the investigators. This special issue describes the design of the study and reports the results of Wave 1.

Under the direction of Robert Wallace, MD, as special guest editor, the articles in this special issue were peer-reviewed in accordance with the usual procedures of this journal. This introduction provides a brief overview of the study and its place within a growing set of longitudinal studies on aging. The introduction also briefly summarizes the contributions that describe the baseline survey and considers some ways in which the study might evolve.

NSHAP is the most comprehensive study of sexual attitudes, behaviors, and problems in the U.S. older population. Although the study was designed more broadly to study the effect of close personal relationships and social ties of all kinds on health, NSHAP's special focus on sexuality is rare; sexuality is one important aspect of close personal relationships that has not been rigorously studied in the older population. The central hypothesis that guided the design and its architecture is that those with high-quality intimate social and sexual relationships will age better in terms of health and well-being than those with poor-quality relationships or those who lack social relationships. The study is one of the newest additions to an expanding set of longitudinal studies on aging, and it explores new facets of aging, including areas of aging that, until now, have been mostly terra incognita within population surveys, at least within the domains of national data and, most especially, in panel data. Social relationships, marriage, and social engagement have figured prominently in aging research, and there have been multiple tests of the hypothesis that positive relations and social engagement are associated with good health, longevity, and lower mortality. More recently, these connections have also been associated with to maintenance of cognitive functioning and delayed onset of cognitive impairment and dementia. Prior to this investigation, data on sexuality (whether behaviors, problems, attitudes, or levels of satisfaction) were rarely adequately measured in these longitudinal studies, and certainly never in as much depth as in NSHAP. Perhaps one reason for this was the concern that the topic was too sensitive and considered taboo for inclusion in national surveys. If so, it was by no means the only such topic deemed to be too sensitive to include in surveys. Circa the early 1980s, social and behavioral scientists shied away from collecting biological specimens, especially blood, in social surveys. Conventional wisdom held that doing something like that was terribly intrusive and would have a devastating impact on the study by lowering response rates. By contrast,

those in the medical world routinely collected blood samples for their studies but firmly believed that it was impossibly intrusive to collect significant economic data on income, and especially on wealth, a view also shared by many social scientists. Although collecting high-quality data with a low refusal rate is difficult in each of these areas, it is now clear that with an adequate rationale, coupled with intensive interviewer training and a degree of assurance of efforts to protect confidentiality, high-quality data can be collected on these sensitive topics. Interviewer confidence, comfort, and self-assurance that the data are important and can be collected are probably the important ingredients for success.

NSHAP and the Evolution of Aging-Related Surveys

NSHAP's roots can be traced back to a few major sources that have not previously been adequately connected and integrated within a national survey. One is a set of smaller, less comprehensive surveys on sexuality and social relations. Another is a group of aging-related longitudinal studies that began to include physiological measures and improved assessments across several domains. Perhaps yet another, much less distinct and significantly overlapping with the first two, is the tradition of studies of marriage, partnerships, and the family within the context of aging. Arguably, this last area is significantly incorporated within the first two, but, with a few notable exceptions, especially that of the work of the NSHAP's principal investigator, a significant part of the research tradition of marriage and the family lies outside of aging research. Two earlier surveys that had focused heavily on sexuality in adults aged 18–59 years, the National Health and Social Life Survey (NHSLS; Laumann, Gagnon, Michael, & Michaels, 1994) and the Chicago Health and Social Life Survey (Laumann, Ellingson, Mahay, Paik, & Youm, 2004), provided the foundation and significant parts of the methodology for NSHAP. Prior studies had also shown an association between chronic illnesses and sexuality; diabetes, for example, has been shown to be associated with erectile difficulties. In fact, sexual dysfunction might be an indicator of potential serious physical and mental disease.

The second source stems from a history of programmatic actions that were designed to improve surveys of health and functioning and integrate health and economic components of aging. The mid-1980s through the present was a renaissance period in the development of new and powerful aging-related social and behavioral longitudinal studies (Suzman, 2004), including the National Long Term Care Survey (NLTCS); the Longitudinal Study on Aging; the health and aging components added to the Panel Study of Income Dynamics; the Early Indicators of Later Work Levels, Disease and Death (the Union Army cohort); the Health and Retirement Study (HRS) and its older cohort AHEAD, which was later merged into a single HRS; the Wisconsin Longitudinal Study; the MacArthur Midlife Study; the National Longitudinal Mortality Study; and a host of international HRS analogs, including the English Longitudinal Study. More recently, the National Health and Aging Trends Study (the successor to the NLTCS) is in its start-up phase, while efforts are being made to find birth, early childhood, and adolescent cohorts whose survivors have now reached middle and old age and are suitable for follow-up in order to understand earlier antecedents of health and functioning at older ages.

Although it is hardly revolutionary-sounding today, one of the first major advances in the development of today's social and behavioral science nationally-representative longitudinal studies on aging was the collection of high-quality data on both health and economic status within the same study—the HRS (Juster & Suzman, 1995). This was followed by the addition of extensive measures of cognitive functioning to the HRS as well as linkage to administrative records. Spurred in part by advances in the National Institute on Aging (NIA) intramural program and also by reports that the NIA Behavioral and Social Research Program had commissioned from the National Academies of Science, including Cells and Surveys (National Research Council [NRC], 2001) and Biosocial Surveys (NRC, 2007), surveys added performance tests to self-reported measures of physical functioning and also began to collect blood samples and saliva specimens. Although smaller epidemiological community-level studies had included performance measures of physical functioning and collected blood samples, the real advance for social science surveys was the collection of these biomeasures along with the array of behavioral variables within the same longitudinal study. The availability of high-quality measures from very different domains and disciplines afforded researchers the opportunity to examine the dynamic interactions among the domains. Perhaps more importantly, the juxtaposition of the various domains of data collection and inquiry within the same study also brought the researchers from the contributing disciplines into much closer contact with each other and reinforced both multi-disciplinary and interdisciplinary interactions.

Contents of the Issue

This special issue is composed of 13 articles that detail the sample design and construction, the measures, and some basic findings in the different domains. The statistical design of the study is laid out in the first article by O'Muircheartaigh, Eckman, and Smith. NSHAP is a national area probability sample of households that represents those aged 57–85 years, balanced for age and gender subgroups. African Americans and Hispanics were oversampled. By partnering with the 2004 household screening wave of the HRS, which was recruiting for a new cohort, NSHAP was able to obtain a sample at a far lower cost than if it had to conduct its own

screening operation. Fortuitously, the HRS's new cohort, conducted by the Institute for Social Research (ISR) at the University of Michigan, required only adults aged 50–56 years, thus permitting the National Opinion Research Center (NORC) to purchase the sample aged 57–85 years. Sharing the heavy costs of the screening sample thus amortized the costs over two studies, benefiting both, as well as saving NIH funds. ISR screened about 30,000 households at a cost of about $2 million and, at the end of the screening period, ISR provided NORC with a list of the age-eligibles for the study, from which a sample size of 4,400 was drawn, distributed by age, gender, race, and ethnicity. Without the collaboration, NSHAP would have had to settle for a significantly smaller sample size. The baseline wave of NSHAP was conducted in 2005, and the authors report an overall response rate of 75.5%, with a slightly higher rate for those aged 57–65 years (78.6%) compared with those aged 75–86 years (73.9). The response rates to the different biomeasures of the study are reported in the next article; they range from 98.6% for height, 89.2% for the HIV test, and 85% for blood spots to 67.5% for vaginal swabs.

The articles that follow deal with the topics of instrument development and measurement. The article by Smith and colleagues provides readers with an overview of the questionnaire sections and domains, including the biomeasures, the self-administered sections of the questionnaire, and the core leave-behind section. The study was conducted using Computer-Assisted Personal Interview (CAPI) methods. For questions that were considered especially sensitive, respondents were offered a choice between using the laptop to read private in the question and enter their responses, or using a separate paper and pencil questionnaire that was sealed by the interviewer in a separate envelope that was returned sealed to the NORC data processing center. At the end of the interview, respondents were given a "leave-behind" interview to fill out and mail back to NORC. Although every participant received the same core set of questionnaire and biomeasures, some parts of the questionnaire and biomeasures were given to only a subset of the respondents. Respondents were randomized into six tracks, and each track received a somewhat different combination of measures. This allowed for a much wider array of questions and measures to be administered within the significant time constraints. Thus, only five tracks received blood spots, three tracks received the vision test, and two tracks were given the Orasure test for HIV. For some tracks, if they did not receive a portion of the questionnaire during the CAPI interview, it was included in the leave-behind section.

This article also details the field interviewer training and methods that were used to gain cooperation and achieve the high response rate for a study that included what many consider sensitive topics. Beyond interviewer training and monetary and in-kind modest incentives, the study used specially tailored letters to address specific concerns for those who were too busy or had concerns about the legitimacy of the study—for example, those who had negative attitudes toward the government, who did not want the biomeasures, or whose spouses or children did not want them to participate. The study used and experimented with the same approach as the HRS to encourage initial refusers to fully participate—a FedEx letter offering either a $200 or $400 incentive that provided a toll-free number with a letter saying they would not be contacted again. Whereas the $200 incentive resulted in a 2% conversion rate for NSHAP, the $400 incentive led to a 9% conversion, and so was used for the remainder. In all, the increased incentive was used for 7% of those interviewed. This article also deals with the issue of informed consent, including maintaining the appropriate balance between coercion and ethical incentive—for example, respondents had the right to refuse any biomeasure at any point. At the end of the interview, the respondents were provided with the results of certain biomeasures, such as weight, waist circumference, blood pressure, smell, and vision, together with a booklet that interpreted these measures. Respondents were also told how they could anonymously get the results of the biomeasures that required further processing in a laboratory, such as HIV and human papillomavirus (HPV) tests, and how NORC contracted with a group to provide the requisite anonymous counseling. Also discussed were the shipping, storage, and quality testing of the biological specimens.

The next three articles cover the quality of life and psychological health indicators, including assessments of social isolation and social networks. The article by Shiovitz-Ezra and colleagues discusses the seven brief indicators of quality of life measured in the NSHAP. Four reflect negative aspects of stress, anxiety, depression, and loneliness, while three assess the positive—happiness, emotional health, and self-esteem. Multiple indicators were used to appraise social isolation, including social connectedness, social participation, social support, and loneliness. York Cornwell and Waite's analysis suggests that the 17 indicators fall into two factors, one that they term "social disconnectedness" or "physical separation from others" and the other "perceived isolation based on feelings of loneliness and lack of social support." Although these factors are correlated, they are also distinct. Some individuals who are part of a large and dynamic social network and are surrounded by people might experience loneliness, especially if their relationships are unfulfilling, whereas others who have fewer social interactions might not experience loneliness. Both dimensions were related to health cross-sectionally.

Cornwell, Schumm, Laumann, and Graber describe the social network module that asked respondents to identify people in their networks who were relevant to them. They were also asked to specify the characteristics of these network members and the relationships among those so identified. There were four separate modules designed to generate names of people in different networks or social circles of

the respondent. The first asked for a list of people with whom they discussed important matters. If a spouse or partner was not included in the first list, he or she was included in the second one. Respondents were then asked if there were others who were very important to them, and other social features. Any remaining household members not included in the first three lists were added to the fourth list. This approach yielded a little more than 13,000 alters, about 10,000 of whom were included in the first list. For each alter named, the study collected information about the type of relationship, demographic characteristics, and the frequency of contact with the respondent. With regard to other alters, there were questions about closeness to the respondent and the probability of discussing health with those individuals. The investigators then derive a series of measures from the ego-centrically based relationship matrix, including network size, composition, emotional closeness of members, volume of contact with network members, network density, and bridging potential (connecting two alters who, in the absence of the respondent, would not be connected). In general, the respondents were likely to discuss health issues with about two-thirds of their alters, especially those with whom they had a strong relationship. The network matrix also captured the respondent's proxy medical decision maker (most had such a proxy). The vast store of structural, process, and relationship data obtained by NSHAP in the social network modules, when combined with the other variables, will offer researchers a rich database for analyses about how these measures interact with health, especially after later waves of data are collected.

The Waite, Laumann, Das, and Schumm article on sexuality presents measures of partnerships, practices, attitudes, and problems, along with a conceptual summary of sexuality within the context of relationships and their quality. This article provides details about data collection on partnerships, cohabitation, and marital histories. NSHAP focused on sexual relationships during the previous 5 years. They report that the probability of having a partner declines with age and that men are more likely than women to have a partner. Those who reported partnered sex during the last year were asked about frequency of sexual relations, genital and oral sex, condom use, and how often sex included kissing, hugging, and so on; these data are reported by gender and age. Data are similarly presented on sexual attitudes (e.g., whether respondents considered a married person having sex with someone other than his or her partner always wrong, and whether this would be wrong even if the partner were in an advanced stage of Alzheimer's), values and beliefs (e.g., whether religious beliefs have shaped/guided sexual behavior), and the importance of sex. Sexual problems, including lack of interest, erectile problems, pain, and vaginal lubrication problems, were also assessed. The article also presents data on nonsexual intimacy and relationship quality. As the authors note, the various facets of sexuality are central to NSHAP, and the rich data collected allowed the researchers to study sexuality at older ages within relationships. When longitudinal data from NSHAP become available, researchers will be able to begin to parse the age differences in sexuality due to aging versus cohort effects and selection factors and to explore the link between sexuality, health, well-being, and other dimensions of the lives of older adults.

In order to assess chronic conditions and diseases, NSHAP used a combination of self-report, functional performance, and biometric measures, such as weight and blood pressure, various blood and plasma measures captured on "blood spots," and salivary tests of hormones (novel for almost all social and behavioral surveys). The methodology, detailed in the article by Williams, Pham-Kanter, and Leitsch, includes discussion of the derivation of measures of cardiovascular disease, an index of comorbidity, diabetes, and aspects of allostatic load. As Schumm and colleagues note, NSHAP's assessment of all five senses, including the objective measurement of smell, taste, touch, and vision, may be a first in a national survey. Touch was assessed using a 2-point discrimination test applied to the index finger of the dominant hand. Olfactory function was assessed by using odorants administered by a felt-tipped pen. Gustatory function was assessed by the identification of taste strips. Because audiometry equipment was too expensive for the study, hearing was assessed by self-report. Self-reports were also obtained on vision, touch, taste, and smell. It is therefore possible to compare the objective and self-report information. If self-report and objective assessments closely match each other, there may be no need to collect the objective data in the future, either in this or in other surveys. If there are significant divergences that differentially map to important outcomes, however, other surveys may be compelled to follow NSHAP's lead. Also important is the fact that these data can be related, for example, to health conditions, or even to medications; the federal Food and Drug Administration, for example, recommended withdrawal of an OTC nasal spray containing zinc because it was related to loss of olfaction. As described next, NSHAP collected extensive medication data.

Qato and colleagues describe the collection of medication utilization data that included prescription, OTC, and nutritional supplements. Fewer than 1% of the respondents refused to participate in the collection of data regarding medications that was done during the home interview. The data were then mapped into therapeutic categories using a sophisticated categorizing system. They were validated against data on self-reported health conditions as well as biomeasures (e.g., pulse rate differentials for beta-blockers and beta agonists, and glycosylated hemoglobin against the use of antidiabetic agents). The medication data collection in NSHAP surely ranks among the most complete by any behavioral survey. In another first for a national, population-based behavioral survey of older adults, Gavrilova and Lindau describe NSHAP's salivary sex hormone collection

and measurement. Almost 91% provided self-collected specimens that were then assayed for estradiol, progesterone, dehydroepiandosterone, and testosterone. The article presents analyses of the validity of the measures based on, for example, estrogen medication usage (only about 11% in this sample) and ovariectomized women. Lindau and colleagues describe how NSHAP was able to collect—for the first time in a large, home-based sample of older women—vaginal self-swab specimens with a 67.5% response rate. The specimens were analyzed for bacterial vaginosis, candidiasis, HPV, and cytological characteristics. In the penultimate article, Drum, Shiovitz-Ezra, Gaumer, and Lindau report on NSHAP's collection of smoking behavior and alcohol usage data. For alcohol usage, NSHAP adopted the quantity–frequency and drinking problem measures used by the HRS. Extensive data on current and lifetime smoking were obtained, and self-reports of current smoking behavior were validated using salivary cotinine levels. The final article, by Williams and McDade, describes the use of dried blood spot (DBS) sampling to obtain measures of hemoglobin, glycosylated hemoglobin, C-reactive protein, and antibodies to Epstein–Barr virus. Use of DBS sampling in large-scale surveys is growing rapidly and has turned out to be a viable, low-cost, though much more limited, alternative to venipuncture (which requires a trained nurse or phlebotomist and so is far more expensive).

Prior NSHAP baseline wave findings

Selected findings from NSHAP's baseline wave have already been reported in several high-impact journals. Lindau and colleagues (2007) reported on the prevalence of sexual activity, behaviors, and problems, and the associations with health status and age received wide national and international media coverage. As the differential age at marriage plus the female survival advantage might predict, within the baseline cross-section, the probability of having a partner was lower at each age, especially for women. Although the prevalence of sexual activity in the last year (for those with partners) steadily declined with age, appreciable activity continued after age 75 years. Within the baseline cross-section, there was a clear relationship across the age range between self-reported health and sexual activity. Qato and colleagues (2008) described the prevalence of prescription and OTC drug use, as well as potentially major risks for adverse drug interactions. In their article on sexual dysfunction among older adults, Laumann, Das, and Waite (2008) detailed the role of stress and poor mental health on reports of sexual problems. Cornwell, Laumann, and Schumm (2008) used NSHAP data to describe social connectedness and satisfaction at different life stages. The NSHAP data have also been used to assess elder mistreatment (Laumann, Leitsch, & Waite, 2008), producing one of the few national prevalence estimates in the older population. Although the questions on mistreatment elicited a very low level of reported physical abuse, verbal mistreatment by the partner or spouse was reported more frequently. The emergence of these publications on the baseline survey argues well for the future prospects of the study.

Conclusions

NSHAP has collected a highly innovative set of data on health and intimate social relationships among older adults. Indicative of the widespread interest in these topics, the study was supported by several components of the National Institutes of Health, including the NIA, the Office of Research on Women's Health, the Office of AIDS Research, and the Office of Behavioral and Social Sciences Research. The baseline study includes an array of measures rarely seen in large-scale, home-based national surveys of older persons. The combination of the various measures within the same study is also unique, and the matrix of measures provides novel opportunities to understand the reciprocal relationships among sexuality, intimate social relationships, and health within the context of aging. The University of Chicago, known for its capacity for stimulating interdisciplinary research and the integration of biological thinking into the psychosocial and sociological, has produced a survey that uniquely combines and integrates these elements. Once subsequent waves become available, the investigators will be able to test their hypotheses about the reciprocal influences among health, sexuality, social intimacy, and the web of social connectedness. However, even with panel data, it will be challenging to disentangle these various elements, making it difficult to establish unambiguous causal influences and sequences.

While still at a very early stage of development, there is a growing appreciation of the potential role that genetics might play in unraveling causal connections in behavioral models and choosing among alternative pathways and models. Some of these possibilities were hinted at in the National Research Council's reports, Cells and Surveys (2001) and Biosocial Surveys (2007), and the discussion of Behavioral and Social Research (BSR) has asked to plan the next panel in the series, this time focusing exclusively on the incorporation of genetic information into social and behavioral models. The 2008 review by the National Advisory Council of the BSR Division (Cacioppo et al., 2009) urged the integration of biogenetic information into longitudinal studies. Sheehan, Didelez, Burton, and Tobin (2008) discussed the potential use of Mendelian randomization for causal inference in observational epidemiology. Indeed, a recent publication (Elliott et al., 2009) provided an excellent example of how the technique can be used. Social and behavioral surveys have begun to obtain DNA (along with the requisite informed consent); some have sequences of candidate genes and others are planning genotyping. Although still at the earliest of stages, realization is growing exponentially of the need for large samples and replication.

Given the high degree of compliance with requests for saliva and blood spots by the NSHAP and the willingness of respondents to provide DNA in studies such as the HRS, the NSHAP investigators should consider obtaining DNA plus informed consent in future waves.

Longitudinal studies of aging are coming to be thought of as members of families of surveys, rather than as single stand-alone studies. Increasingly, analysts are making creative use of multiple studies. The need for replication of behavioral genetic findings within large samples is accelerating this trend. Additionally, in order to permit comparisons, replications, and pooled analyses, BSR is encouraging the harmonization of outcome measures, such as cognitive function, across existing longitudinal studies, both nationally and internationally. There are complex trade-offs associated with decisions about whether to use standardized measures out of a toolbox rather than develop new measures, but measures used to calibrate to other studies often need to be administered to only a modest random subsample. NSHAP has been an importer of measures used in other studies such as the HRS and the NHSLS. However, given the array of novel approaches in areas such as sexuality, subjective sense of isolation, ego-centric networks, salivary sex hormones, sensory assessment, and medication data collection, the investigators should also begin to explore their role as potential exporters to other longitudinal studies of new or improved, and significantly shortened, portable measures.

There is also a growing awareness of the importance of earlier life stages for understanding old age and aging. However, many studies focused on aging start only at age 50 or 65 years and thus may lack information on early life conditions and exposures. It takes a formidable level of generativity, funding, and an extended time horizon to establish birth cohorts that are followed up into older ages. The 1946, 1958, and 1970 United Kingdom national birth cohorts are excellent examples of such cohorts (Stewart-Brown, Fletcher, & Wadsworth, 2005). Several NIA investigators are beginning to explore the impact of early life exposures and health conditions on late life health in these cohorts, which unfortunately have no U.S. national counterparts. In order to compensate for the lack in the United States of early childhood cohorts that have matured into middle age or old age, BSR is encouraging the follow-up and reinterview of U.S. child and adolescent cohorts that have reached, or soon will reach, middle and older ages. BSR is also encouraging investigators to use the few studies that extends from childhood into older ages to explore how best to obtain reliable and valid information about early childhood and adolescence because those studies already contain information collected during childhood. Perhaps especially in the area of intimacy, social relations, and sexuality, psychodynamic and other models of development suggest the importance of early childhood and adolescent experiences on later life patterns. NSHAP investigators might consider exploring the availability of relevant cohort studies of children, adolescence, and early adulthood that might help fill in some of the missing pieces.

In summary, the NSHAP team of investigators has created a very rich data set on sexuality, intimate relationships, and health and functioning within a broad context. The baseline study, containing an array of novel measures and assessments, has already produced a significant number of important findings, including ones showing an association between sexuality and health. A second NSHAP follow-up wave is in the planning stages, and its panel data will allow researchers to begin to sort out the reciprocal causal relations among its multiple variables.

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References

Cacioppo, J., Garber, A., Berkman, L., Cartensen, L., Christakis, N., Dilworth-Anderson, P., et al. (2009). *2008 Review of the division of behavioral and social research by National Advisory Council on Aging*. Bethesda, MD: National Institute on Aging.

Cornwell, B., Laumann, E., & Schumm, P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, *73*, 185–203.

Elliott, P., Chambers, J., Zhang, W., Clarke, R., Hopewell, J., Peden, J., et al. (2009). Genetic loci associated with C-reactive protein levels and risk of coronary heart disease. *Journal of the American Medical Association*, *302*, 37–47.

Juster, F., & Suzman, R. (1995). An overview of the Health and Retirement Study. *Journal of Human Resources*, *30*, S7–S56.

Laumann, E., Das, A., & Waite, L. (2008). Sexual dysfunction among older adults: Prevalence and risk factors from a nationally representative U.S. probability sample of men and women 57 to 85 years of age. *Journal of Sexual Medicine*, *5*, 2300–2311.

Laumann, E., Ellingson, S., Mahay, J., Paik, A., & Youm, Y. (2004). *The sexual organization of the city*. Chicago: University of Chicago Press.

Laumann, E., Gagnon, J., Michael, R., & Michaels, S. (1994). *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press.

Laumann, E., Leitsch, S., & Waite, L. (2008). Elder mistreatment in the U.S.: Prevalence estimates from a nationally-representative study. *Journal of Gerontology: Social Sciences*, *63*, S248–S254.

Lindau, S., Schumm, L. P., Laumann, E., Levinsion, W., O'Muircheartaigh, C., & Waite, L. (2007). A study of sexuality and health among older adults in the United States. *New England Journal of Medicine*, *357*, 762–774.

National Research Council. (2007). Committee on Advances in Collecting and Utilizing Biological Indicators and Genetic Information in Social Science Surveys. In: Weinstein, M., Vaupel, J., & Wachter, K. (Eds.), *Biosocial surveys*. Washington, DC: National Academy Press.

National Research Council. (2001). Committee on Population. In: Finch, C., Vaupel, J., & Kinsella, K. (Eds.), *Cells and surveys: Should*

biological measures be included in social science research? Washington, DC: National Academy Press.

Qato, D., Alexander, G., Conti, R., Johnson, M., Schumm, P., & Lindau, S. (2008). Use of prescription and over-the-counter medications and dietary supplements among older adults in the United States: Findings from a population-based study. *Journal of the American Medical Association*, *3000*, 2867–2878.

Sheehan, N., Didelez, V., Burton, P., & Tobin, M. (2008). Mendelian randomisation and causal inference in observational epidemiology. *Public Library of Science Medicine*, *5*, 1205–1210.

Stewart-Brown, S. L., Fletcher, L., & Wadsworth, M. E. (2005). Parent-child relationships and health problems in adulthood in three UK national birth cohort studies. *European Journal of Public Health*, *15*, 640–646.

Suzman, R. (2004). Epilogue: Research on population aging at NIA: Retrospect and prospect. *Population and Development Review*, *30*, 239–264.

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